

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of allocating upstream resources to a plurality of cable modems, comprising:

receiving initial upstream channel requests from the plurality of cable modems;

retrieving data from the initial upstream channel requests;

grouping the plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems;

ordering allocation of said upstream resources to each of the plurality of cable modems based on the retrieved data and based on the group to which each of the cable modems belongs; and

allocating said upstream resources to each of the cable modems based on the ordering.

2. (canceled)

3. (currently amended) The method of claim 1, ~~wherein~~ where allocating said upstream resources comprises:

assigning initialization channels of the upstream resources to each of the plurality of cable modems based on the grouping of the plurality of cable modems.

4. (currently amended) The method of claim 1, ~~wherein~~ where allocating said upstream resources comprises:

assigning registration channels of the upstream resources to each of the plurality of cable modems based on the grouping of the cable modems.

5. (currently amended) The method of claim 1, ~~wherein~~ where a first group of the plurality of groups comprises message transferring agents.

6. (currently amended) The method of claim 1, further comprising:

designating a first group of the plurality of groups as being allocated the requiring ~~said allocation of~~ upstream resources before other, different groups of the plurality of groups.

7. (currently amended) The method of claim 6, further comprising:

designating a second group of the plurality of groups as being ~~[[said]]~~ allocated the upstream resources subsequent to the first group.

8. (currently amended) A cable modem termination system (CMTS), comprising:

a memory ~~configured~~ to store instructions; and

a processing unit ~~configured~~ to execute the instructions in the memory to:

group a plurality of cable modems (CMs) into a plurality of groups

based on quality of service requirements of each of the cable modems,

re-boot the CMTS,

receive, after re-booting, initial upstream channel requests from the

plurality of CMs,

retrieve data from each of the requests, and

determine an order for allocating upstream resources to each of the
plurality of CMs based on the retrieved data and the group to which each of the
CMs belongs.

9. (canceled)

10. (currently amended) The system of claim 8, ~~wherein~~ where the processing unit is
further ~~configured~~ to execute the instructions in the memory to:

allocate initialization channels of the upstream resources to each of the plurality
of CMs based on the grouping of the plurality of CMs.

11. (currently amended) The system of claim 8, ~~wherein~~ where the processing unit is
further ~~configured~~ to execute the instructions in the memory to:

allocate registration channels of the upstream resources to each of the plurality of
CMs based on the grouping of the CMs.

12. (currently amended) The system of claim 8, ~~wherein~~ where a first group of the
plurality of groups comprises message transferring agents.

13. (currently amended) The system of claim 8, ~~wherein~~ where the processing unit is further ~~configured~~ to execute the instructions in the memory to:

designate the first group of the plurality of groups to receive ~~as requiring the~~ allocation of upstream resources before other groups of the plurality of groups.

14. (currently amended) The system of claim 13, ~~wherein~~ where the processing unit is further ~~configured~~ to execute the instructions in the memory to:

designate a second group of the plurality of groups as being ~~being~~ allocated ~~the~~ upstream resources subsequent to the first group.

15. (currently amended) A method of allocating upstream resources in a cable modem system, comprising:

receiving upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems;

retrieving data from each of the requests;

determining an order that the upstream resources are to be assigned to each of the plurality of cable modems based on the retrieved data and the address of each of the resource requests; and

allocating the upstream resources based on the determined order.

16. (currently amended) The method of claim 15, ~~wherein~~ where the address comprises a medium access control (MAC) address.

17. (original) The method of claim 15, further comprising:
grouping the plurality of cable modems into a plurality of groups.
18. (currently amended) The method of claim 17, ~~wherein~~ where ordering the allocation of upstream resources comprises allocating the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each of said cable modems belongs.
19. (currently amended) The method of claim 17, ~~wherein~~ where the grouping of the plurality of cable modems comprises grouping the plurality of cable modems into the plurality of groups based on quality of service requirements of each of the cable modems.
20. (currently amended) A cable modem termination system, comprising:
a memory ~~configured~~ to store instructions;
a communication interface ~~configured~~ to receive upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems; and
a processing unit ~~configured~~ to execute the instructions in the memory to:
retrieve data from each of the requests, and
determine an order for allocating upstream resources to each of the plurality of cable modems based on the retrieved data and address of each of the resource requests.

21. (currently amended) The system of claim 20, ~~wherein~~ where the address comprises a medium access control (MAC) address.
22. (currently amended) The system of claim 20, ~~wherein~~ where the processing unit is further ~~configured~~ to execute the instructions in the memory to:
- group the plurality of cable modems into a plurality of groups.
23. (currently amended) The system of claim ~~[[20]]~~ 22, ~~wherein~~ where the processing unit is further ~~configured~~ to execute the instructions in the memory to:
- allocate the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each cable modem belongs.
24. (currently amended) The system of claim 22, ~~wherein~~ where the processing unit is further ~~configured~~ to execute the instructions in the memory to:
- group the plurality of cable modems into the plurality of groups based on quality of service requirements of each of the cable modems.
25. (previously presented) A method of initializing cable modems subsequent to a cable modem termination system re-boot, comprising:
- receiving initial upstream channel requests from a plurality of said modems;
- retrieving first data from each of the requests; and

determining an order in which to assign upstream channels to each of the plurality of modems based on the retrieved first data.

26. (currently amended) The method of claim 25, ~~wherein~~ where the first data comprises a medium access control (MAC) address.

27. (original) The method of claim 25, further comprising:
grouping the plurality of modems into a plurality of groups.

28. (currently amended) The method of claim 27, ~~wherein~~ where grouping the plurality of cable modems comprises grouping the plurality of modems into the plurality of groups based on quality of service requirements of each of the modems.

29. (currently amended) The method of claim 27, ~~wherein~~ where a first group of the plurality of groups comprise message transferring agents.

30. (currently amended) The method of claim 27, further comprising:
designating a first group of the plurality of groups as receiving ~~requiring~~
allocation of upstream resources before other said groups of the plurality of groups.

31. (previously presented) The method of claim 30, further comprising:
designating a second group of the plurality of groups as being allocated said
upstream resources subsequent to the first group.

32. (canceled)

33. (canceled)

34. (currently amended) A system for allocating upstream resources to a plurality of cable modems subsequent to a cable modem termination system (CMTS) re-boot, comprising:

a processor to:

~~means for grouping~~ group the plurality of cable modems into a plurality of groups; and

~~means of identifying~~ identify an order, subsequent to the CMTS re-boot, that said upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs and based on data retrieved from the plurality of cable modems.